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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/550,993 | 09/26/2005 | Michael A. Kraemer | 58488US004 | 1419 |

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| EXAMINER | |
|---|---|
| PIERRE LOUIS, ANDRE | |
| ART UNIT | PAPER NUMBER |
| 2123 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 12/08/2009 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

LegalUSDocketing@mmm.com
LegalDocketing@mmm.com

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/550,993 | KRAEMER ET AL. | |
| | Examiner | Art Unit | |
| | ANDRE PIERRE LOUIS | 2123 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *19 August 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-4,6 and 13-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6 and 13-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

1. The amendment filed on 8/19/2009 has been received and fully considered.

2. Claims 13-20 are added; and claims 5, 7-12 are cancelled.

3. Claims 1-4, 6, and 13-20 are now presented for examination.

## *Response to Arguments*

4. Applicant's arguments filed 5/28/2009 have been fully considered but they are not persuasive.

4.1 Applicant's argues that neither Duret nor O'Brien teach or suggest the displaying of a shape of the prosthesis together with the surface; the stability requirement to include minimum required thickness, generating control data which meets stability requirements and displaying step, as recited in the claims; the Examiner respectfully disagrees and notes that O'Brien, used as a primary reference in the rejection discloses a method for dental manufacturing process, including creating a model including surfaces corresponding to a dental prosthesis, wherein 3-D digital data corresponding to these surfaces where the dental prosthesis are to be manufactured *(see col.2 lines 32-62).* The Examiner respectfully notes that these data are substantially surface control data and would clearly be understood by one of ordinary skilled in the art. O'Brien continues to disclose the modification of a plurality of parameters to include minimum thickness of the prosthesis *(see O'Brien for example col.4 lines 14-4).* While O'Brien does not specifically state the term stability required, one of ordinary skilled in the art would clearly understand that the modification provided by O'Brien would ensure stability of the model, so as to obtain best fit of the model with the created surfaces, as O'Brien displays various images of the dental prosthesis on a display monitor 30 corresponding with the original data collected by scanner 20 and the collected information is used to control how the dental prosthesis

are to be manufactured *(see fig.5-6, col.3 line 66-col.4 line 47), w*ith the aid a CAD equipment, a display monitor. Duret, brought in for further support of the rejection of the claims, discloses a control data used to control the planes where a dental prosthesis are to be implanted using numerical control unit *(see Duret fig.7, 18-20)* and further shows an image displayed with control plane/surface image *(see Duret fig.15, 19-20),* taking into consideration thickness of the material which will hold the prosthesis where a user/operator can visualize the model, making it possible to verify the exact shape of the model, during his dental prosthesis making process *(also see Duret title, col.7 line 64-col.8 line 36),* thereby obtaining a best-fit for dental prosthesis model *(see Duret col.2 lines 47-57 and col.4 lines 9-14).*

4.2 While the applicant believes that the independent claims, along with the dependent claims should be found allowable, the Examiner respectfully disagrees and asserts that the combined references cited teach the entire claimed invention. Applicant is further encouraged to look at the new references cited but not used shown in the conclusion section of this and the previous Office Action. However, the grounds of rejections below fully support the Examiner's position in rejecting the instant claims.

## ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the

inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5.0 Claims 1-4, 6, and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Brien et al. (U.S. Patent No. 6,915,178), in view of Duret et al. (U.S. Patent No. 4,663,720).

5.1 In considering the independent claims 1 and 6, O'Brien et al. substantially teaches a method for processing data regarding a dental prosthesis, the method comprising the steps of: a) providing input data which represent a three-dimensional surface of a tooth stump prepared for a prosthesis *(fig.1, col.2 lines 44-55)*; b) providing stability requirements for the prosthesis, wherein the stability requirements include a minimum required thickness of the prosthesis *(fig.1, 5, col.4 line 14-col.5 line 3)*; c) generating control data from said input data, said control data representing a control surface which meets the stability requirements *(col.2 line 44-col.3 line 11 and col.4 lines 14-47)*: d) generating design data which represent the three-dimensional shape of the prosthesis *(col.2 line 44-col.3 line 3 and col.4 line 14-47)*; and e) displaying the shape of the prosthesis together with the control surface on a monitor, wherein the displayed control surface provides a visual representation of the minimum required thickness, design data are modified by a user based on a visual comparison of the displayed design data and the displayed control surface in order to meet the stability requirements, and the design of the prosthesis corresponding to the modified design data is displayed on the monitor together with the control surface *(fig.2-4, col.4 line 14-47 and col.2 line 44-col.3 line 11)*. Although O'Brien et al. does not specifically state that the generated data is a control data, as the claims call it; one of ordinary skilled in the art would clearly appreciated the approach taken by O'Brien et al. in representing the surfaces used to accurately create and display the dental prosthesis, taking into consideration die spacers,

minimum thickness requirement of the prosthesis, contact points, grooves, cusp overlays, marginal ridges etc and are substantially similar to the control data recited by the applicant *(see fig.1-2, col.4 line 14-col.4 line 22).* Nevertheless, Duret et al. substantially teaches a control surface data used to control the planes where the prosthesis are to be implanted, using a numerical control unit and providing an interference check used to select a best fit shape and size, during prosthesis making process to substantially ensure stability of the prosthesis *(see col.2 lines 47-57 and col.4 lines 9-14)*; thereby displaying the shape of the prosthesis together with the control plane *(see abstract, fig.7, 18-20, also see col.6 line 17-44 and col.7 line 64-col.8 line 14).* The cited references further provide the followings with regards to claim 6: (a) an input device *(see O'Brien et al. fig.5 (28), also see Duret et al. fig.7 and 21)*; (b) a central unit *(see O'Brien et al. fig.5 (24 and 24A), also see Duret et al. fig.7 and 21)*; and (c) a display device *(see O'Brien et al. fig.5 (30), also see Duret et al. fig.7 and 21).* O'Brien et al. and Duret et al. are analogous art because they are from the same field of endeavor and that the method teaches by Duret et al. is similar to that of O'Brien et al. Therefore, it would have been obvious to one of ordinary skilled in the art to combine the dental prosthesis of Duret et al. with the dental prosthesis manufacturing of O'Brien et al. because Duret et al. teaches the advantage of high precision and speed in the production of the prosthesis *(see col.3 lines 19-28).*

5.2 With regards to claim 2, the combined teachings of O'Brien et al. and Duret et al. substantially teach that the design data are generated from the input data *(see O'Brien et al. col.4line 4-47).*

5.3 As per claim 3, the combined teachings of O'Brien et al. and Duret et al. substantially teach the outer surface of the prosthesis is scaled differently in at least two spatial

axes such that a given preparation margin remains thereby unchanged *(see O'Brien et al. fig.2-3, col.4 line 14-col.5 line 12; also see Duret et al. fig.14-17).*

5.4 With regards to claim 4, the combined teachings of O'Brien et al. and Duret et al. substantially teach the control surface meets the stability requirements *(see O'Brien et al. fig.1-2, col.2 line 44-col.3 line 11; also see Duret et al. abstract).*

5.5 As per claim 13, the combined teachings of O'Brien et al. and Duret et al. substantially teach that wherein the input data is provided by a scanner *(see O'Brien fig.5, col.1 lines 29-44, and col.3 line 66-col.4 line 29; also see Duret fig.5,7).*

5.6 Regarding claim 14, the combined teachings of O'Brien et al. and Duret et al. substantially teach that wherein the scanner is an intra-oral scanner *(see O'Brien fig.5, col.1 lines 29-44, and col.3 line 66-col.4 line 29; also see Duret fig.5,7).*

5.7 As per claim 15, the combined teachings of O'Brien et al. and Duret et al. substantially teach that wherein the outer surface of the prosthesis is scaled based on data input via a keyboard *(see O'Brien col.2 line 44-62 and col.4 line 30-47).*

5.8 With regards to claim 16, the combined teachings of O'Brien et al. and Duret et al. substantially teach that wherein an outer surface of the prosthesis is scaled in at least two spatial axes, and wherein at least one spatial axis has a variable scaling factor *(see O'Brien et al. fig.2-3, col.4 line 14-col.5 line 12; also see Duret et al. fig.14-17).*

5.9 Regarding claim 17, the combined teachings of O'Brien et al. and Duret et al. substantially teach that wherein the stability requirements are automatically provided by a computing apparatus *(see O'Brien col.2 line 44-62 and col.4 line 30-47; and Duret col.4 lines 16-27)..*

5.10 With regards to claim 18, the combined teachings of O'Brien et al. and Duret et al. substantially teach that wherein the control data are generated automatically by a computing apparatus *(see O'Brien col.4 line 30-col.5 line 22; and Duret col.4 lines 16-27).*

5.11 As per claim 19, the combined teachings of O'Brien et al. and Duret et al. substantially teach that wherein the stability requirements are automatically provided by the central unit *(see O'Brien col.4 line 30-col.5 line 22; and Duret col.4 lines 16-27).*

5.12 Regarding claim 20, the combined teachings of O'Brien et al. and Duret et al. substantially teach that wherein the control data are generated automatically by the central unit *(see O'Brien col.4 line 30-col.5 line 22; and Duret col.4 lines 16-27).*

## ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6.1 Kopelman et al. (US Patent No. 7,236,842) teaches a system and method for manufacturing a dental prosthesis.

7. Claims 1-4, 6, and 13-20 are rejected and **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDRE PIERRE LOUIS whose telephone number is (571)272-8636. The examiner can normally be reached on Mon-Fri, 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul L. Rodriguez can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. P. L/
Examiner, Art Unit 2123

December 2, 2009

/Paul L Rodriguez/
Supervisory Patent Examiner, Art Unit 2123